Abstract

A polynucleotide detecting cell provided with a first electrode (111) to which different DNA probes (13, 14, 15, 16) are fixed in luminous areas (3, 4, 5, 6) differing with the type of DNA probe and a second electrode (113-1, 113-2) opposite to the first electrode is used; target polynucleotides are trapped through hybridization of DNA probes fixed to luminous areas with target polynucleotides; an extending reaction is carried out using an ECL-labeled base (dNTP) to extend the hybridized DNA probes; ECL generated by the application of a voltage between the first electrode and the second electrode is detected; and the presence or absence of any extended chain generated by the extending reaction is detected. The DNA detecting cell of simple apparatus configuration and the assay apparatus using it according to the invention are capable of high speed detection of hybridization between target DNA fragments and DNA probes, and a large volume of probe assaying can be accomplished in a short period of time.